

CLAIMS

1. A refrigerator comprising:
 - a compressor (1) for compressing refrigerant;
 - 5 a first liquid heat exchanger (3) performing heat exchange between the refrigerant and first liquid heat medium;
 - an expander (11, 12) expanding the refrigerant;
 - 10 a second liquid heat exchanger (4) performing heat exchange between the refrigerant and second liquid heat medium;
 - an air heat exchanger (6) performing heat exchange between the refrigerant and air;
 - 15 a refrigerant flow rate adjuster (8, 9) adjusting refrigerant flow rates in the first liquid heat exchanger (3), the second liquid heat exchanger (4) and the air heat exchanger (6); and
 - 20 a controller (19) controlling the refrigerant flow rate adjuster (8, 9) so that the refrigerant flows to the air heat exchanger (6) at a flow rate not lower than a minimum flow rate (Q_s) which prevents stagnation of the refrigerant in the air heat exchanger (6) in a situation where the refrigerant is made to flow to both the first liquid heat exchanger (3) and the air heat exchanger (6).

2. A refrigerator as claimed in claim 1, wherein
the controller (19) controls the refrigerant flow
rate adjuster (8, 9) so that the refrigerant flows to the
air heat exchanger (6) at a flow rate not lower than a
5 minimum flow rate (Q_s) determined on basis of a temperature
of outside air where the air heat exchanger (6) is placed
in a situation where the refrigerant is made to flow to
both the first liquid heat exchanger (3) and the air heat
exchanger (6).

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3. A refrigerator as claimed in claim 1, wherein
the controller (19) controls the refrigerant flow
rate adjuster (8, 9) so that the refrigerant flows to the
air heat exchanger (6) at a flow rate not lower than a
15 minimum flow rate (Q_s) determined on basis of a temperature
of outside air where the air heat exchanger (6) is placed
and a target temperature (T_{s1}) of the first liquid heat
medium that undergoes heat exchange with the refrigerant in
the first liquid heat exchanger (3), in a situation where
20 the refrigerant is made to flow to both the first liquid
heat exchanger (3) and the air heat exchanger (6).

4. A refrigerator as claimed in claim 1, wherein
the controller (19) controls the refrigerant flow
25 rate adjuster (8, 9) so that the refrigerant flows to the

air heat exchanger (6) at a flow rate not lower than a minimum flow rate (Q_s) determined on basis of a temperature of outside air where the air heat exchanger (6) is placed, a target temperature (T_{s1}) of the first liquid heat medium 5 that undergoes heat exchange with the refrigerant in the first liquid heat exchanger (3), and a temperature (T_{m1}) of the first liquid heat medium that has undergone the heat exchange with the refrigerant in the first liquid heat exchanger (3), in a situation where the refrigerant is made 10 to flow to both the first liquid heat exchanger (3) and the air heat exchanger (6).